UNITED STATES PATENT AND TRADEMARK OFFICE

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7590 12/16/2004	EXAMINER
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2664	

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DATE MAILED: 12/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>09 July 2001</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,10,14-15,17-19 and 25-30* is/are rejected.

7)☐ Claim(s) *5-9,11-13,16 and 20-24* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>7/9/2001</u>.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 1-30 have been examined.

Claim Objections

2.   Claim 18 is objected to because of the following informalities: claim 18 recites

"The method as claimed in claim 16" should be corrected to –The method as claimed in

claim 17--. Appropriate correction is required.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4.   Claims 1-4, 14-15, 17-19, 25-28 are rejected under 35 U.S.C 102(e) as being

anticipated by ROCHBERGER et al (US 6,760,309 B1).

Claims 1, 17, 28, ROCHBERGER et al discloses a network node apparatus and

method of handling packet traffic on a packet-based network, the method comprising

the steps of: receiving, at a network node, a flow packets from the packet-based

network **(receive packet at ingress port, step 150 of figure 8)**; determining, for each

of the received packets, a metric at least partly based on the duration of transmission

for the received packet **(TTL field)**; assigning, to each of the packets, a relative service

priority on the basis of the metric **(determine priority based on TTL field, see step**

156 of figure 8); and queuing one or more of the packets in a queue and transmitting

the queued packets from the network node **(place in proper queue according to**

priority, see step 158 of figure 8, also column 14, lines 33-50).

Claim 2, ROCHBERGER et al teach the method as claimed in claim 1, further

comprising the step of: calculating (judge) one or more statistical measures associated

with value of said metric for the received packet, for use in the step of assigning a

relative service priority **(column 12, line 18-22, also see column 14, lines 58-67).**

{The distributor 104, utilizing the appropriate curve mapping TTL to

priority, makes a determination as to which priority queue to forward the packet

to, (column 12, line 18-22).}

Claims 3 and 18, ROCHBERGER et al teach the method as claimed in claim 1

and 17, further comprising preferentially dropping packets that have a lower relative

service priority in favor of packets that have a greater relative service priority, prior to

the step of queuing one or more of the packets.

{Packets that arrive with TTL field values smaller than T1 are discarded

since they are stale to an extent that they cannot be used at the destination.

(column 11, lines 45-50).}

Claims 4 and 19, ROCHBERGER et al further teach marking packets that have a

lower relative service priority, prior to the step of queuing one or more of the packets

{according to figure 4, the TTL field 90 marking the relative service priority, such

as (see figure 5) packets are classified into one of four classes 122 represented by priorities P1 through P4 with P1 having the highest priority and P4 the lowest. Packets with TTL field values between T1 and T2 are assigned priority P4, the lowest priority. Packets with TTL field values between T2 and T3 are assigned priority P3. Packets with TTL field values between T3 and T4 are assigned priority P2. Packets with TTL field values between T4 and T6 are assigned priority P1, the highest priority, (column 11, lines 43-55).}

Claims 14 and 25, ROCHBERGER et al teaches wherein the packet-based network transmits Internet protocol (IP) packets **(column 9, line 46).**

Claims 15 and 26, ROCHBERGER et al teaches wherein the packets-based network uses the transmission connection protocol (TCP) **(column 9, line 46).**

Claim 27, ROCHBERGER et al discloses a network node apparatus for handling packet traffic on a packet-based network, said apparatus including: means (ingress port 102) for receiving, at a network node, a flow of packets from the packet-based network; means (distributor 104) for determining, for each of the received packets, a metric (TTL) at least partly based the duration of transmission for the received packet; means (distributor 104) for comparing, for each of the received packets, said metric with a corresponding reference value; means for assigning, to each of the packets, a relative service priority on the basis of the comparison; means (distributor 104) for queuing one or more of the packets in a queue and transmitting the queued packets from the network node.

{The distributor 104 functions to extract the TTL related information from the packet used to convey such information, i.e., the RTP packet. In particular the distributor 104 examines the TTL valid field 86, class field 88 and TTL field 90. The distributor 104, utilizing the appropriate curve mapping TTL to priority, makes a determination as to which priority queue to forward the packet to, (column 10-30)}

5.   Claim 10 is rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over ROCHBERGER et al (US 6,760,309 B1).

Claim 10, ROCHBERGER et al teach wherein said metric incorporates a hopcount representative of the number of nodes traversed by the packet from source to the packet to the network node (see figure 4, element 90 (TTL)).

{(Time-To-Live (TTL) field in header of packet is used for checking the number of nodes through which a packet passes, which sometimes referred to as a "hop-count" field.}

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7.   Claims 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over

ROCHBERGER et al (US 6,760,309 B1).

Claims 29-20, as explained in the rejection statement of claims 1 and 27,

ROCHBERGER et al (US 6,760,309 B1) discloses all claim limitations recited in 1 and

27.

Although ROCHBERGER et al does not teach a computer software program for

handling packet traffic on a packet-based network, it is well known in the art that

software program can be implemented to support the method above.

Therefore, it would have been obvious to those having ordinary skill in the art at

the time of the invention was made to implement a software program, in

ROCHBERGER et al for performing method of handling packet traffic on a packet-

based network.

Allowable Subject Matter

8.   Claims 5-9,11-13, 16, 20-24 are objected to as being dependent upon a rejected

base claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject

matter: the prior art made of record does not teach or fairly suggest in combination the

step of dynamically allocating a packet drop probability for one or more of the packets,

based on the assigned relative service priority for the respective packets, prior to the

step of queuing one or more packets, wherein packets with a higher relative service

priority are allocated a lower packet drop probability and packets with a lower relative service priority are allocated a higher packet drop probability (claims 5-8, 20-24).

The prior art further fails to teach in combination wherein said metric is the value of time taken by the packet to traverse the network from the source to destination, and the packet's corresponding acknowledgement to traverse the network from the destination to source (claim 9).

The prior art made of record does not teach or fairly suggest in combination wherein the metric is the value of the round trip time (RTT) field in the TCP packet header (claim 16).

The prior art made of record fails to teach or fairly suggest in combination wherein the statistical measures include average value (claims 11-13).
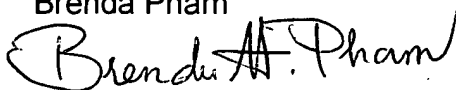
Conclusion

9.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brenda Pham whose telephone number is (571) 272-3135. The examiner can normally be reached on Monday-Friday from 9:00 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin, can be reached on (571) 272-3134.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571) 272-2600.

December 7, 2004
Brenda Pham